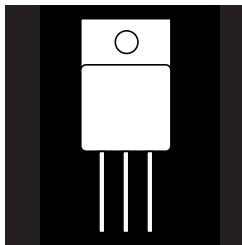


INSULATED GATE BIPOLAR TRANSISTOR (IGBT) IN A HERMETIC TO-254AA PACKAGE



1000 Volt, 15 And 20 Amp, N-Channel IGBT In A Hermetic Metal Package

FEATURES

- Isolated IGBTs In A Hermetic Package
- High Input Impedance
- Low On-Voltage
- High Current Capability
- High Switching Speed
- Low Tail Current
- Available Screened To MIL-S-19500, TX, TXV and S Levels
- Ceramic Feedthroughs Available

DESCRIPTION

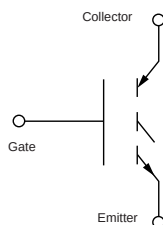
This IGBT power transistor features the high switching speeds of a power MOSFET and the low on-resistance of a bipolar transistor. It is ideally suited for high power switching applications such as frequency converters for 3Ø motors, UPS and high power SMPS.

MAXIMUM RATINGS @ 25°C Unless Specified Otherwise

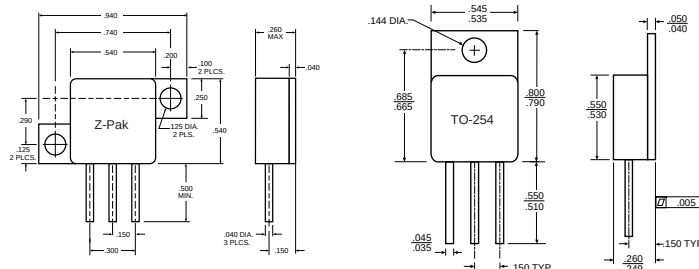
PART NUMBER	I _C (Cont.) @ 90°C, A	V _{(BR)CES} V	V _{CE(sat)} (Typ.) V	T _f (Typ.) ns	q _{JC} °C/W	P _D W	T _J °C
OM6517SA	20	1000	4.0	300	1.0	125	150
OM6526SA	15	1000	4.0	300	1.5	85	150

3.1

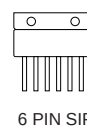
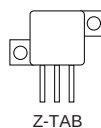
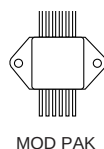
SCHEMATIC



MECHANICAL OUTLINE



PACKAGE OPTIONS



Standard Products are supplied with glass feedthroughs. For ceramic feedthroughs, add the letter "C" to the part number. Example - OMXXXXCSA.
IGBTs are also available in Z-Tab, dual and quad pak styles - Please call the factory for more information.

PRELIMINARY DATA: OM6517SA

IGBT CHARACTERISTICS

Parameter - OFF	Min.	Typ.	Max.	Units	Test Conditions
$V_{(BR)CES}$ Collector Emitter Breakdown Voltage	1000			V	$V_{CE} = 0$ $I_C = 250 \mu A$
I_{CES} Zero Gate Voltage Drain Current			0.25	mA	$V_{CE} = \text{Max. Rat.}, V_{GE} = 0$
			1.0	mA	$V_{CE} = 0.8 \text{ Max. Rat.}, V_{GE} = 0$ $T_C = 125^\circ C$
I_{GES} Gate Emitter Leakage Current			± 100	nA	$V_{GE} = \pm 20 \text{ V}$ $V_{CE} = 0 \text{ V}$
Parameter - ON					
$V_{GE(th)}$ Gate Threshold Voltage	4.5		6.5	V	$V_{CE} = V_{GE}, I_C = 1 \text{ mA}$
$V_{CE(sat)}$ Collector Emitter Saturation Voltage		3.0		V	$V_{GE} = 15 \text{ V}, I_C = 15 \text{ A}$ $T_C = 25^\circ C$
$V_{CE(sat)}$ Collector Emitter Saturation Voltage		4.0	4.5	V	$V_{GE} = 15 \text{ V}, I_C = 15 \text{ A}$ $T_C = 125^\circ C$
Dynamic					
g_{fs} Forward Transductance	5.5			S	$V_{CE} = 20 \text{ V}, I_C = 15 \text{ A}$
C_{ies} Input Capacitance		2000		pF	$V_{GE} = 0$
C_{oes} Output Capacitance		160		pF	$V_{CE} = 25 \text{ V}$
C_{res} Reverse Transfer Capacitance		65		pF	$f = 1 \text{ MHz}$
Switching-Resistive Load					
$T_{d(on)}$ Turn-On Time		50		nS	$V_{CC} = 600 \text{ V}, I_C = 15 \text{ A}$
t_r Rise Time		200		nS	$V_{GE} = 15 \text{ V}, R_g = 3.3 \text{ } ,$
$T_{d(off)}$ Turn-Off Delay Time		200		nS	$T_J = 125^\circ C$
t_f Fall Time		300		nS	
Switching-Inductive Load					
$T_{d(off)}$ Turn-Off Delay Time		200		nS	$V_{CEclamp} = 600 \text{ V}, I_C = 15 \text{ A}$
t_f Fall Time		200		nS	$V_{GE} = 15 \text{ V}, R_g = 3.3$
E_{off} Turn-Off Losses		1.5		mWs	$L = 1 \text{ mH}, T_J = 125^\circ C$

PRELIMINARY DATA: OM6526SA

IGBT CHARACTERISTICS

Parameter - OFF	Min.	Typ.	Max.	Units	Test Conditions
$V_{(BR)CES}$ Collector Emitter Breakdown Voltage	1000			V	$V_{CE} = 0$ $I_C = 150 \mu A$
I_{CES} Zero Gate Voltage Drain Current			150	μA	$V_{CE} = \text{Max. Rat.}, V_{GE} = 0$
			700	μA	$V_{CE} = 0.8 \text{ Max. Rat.}, V_{GE} = 0$ $T_C = 125^\circ C$
I_{GES} Gate Emitter Leakage Current			± 100	nA	$V_{GE} = \pm 20 \text{ V}$ $V_{CE} = 0 \text{ V}$
Parameter - ON					
$V_{GE(th)}$ Gate Threshold Voltage	4.5		6.5	V	$V_{CE} = V_{GE}, I_C = 700 \mu A$
$V_{CE(sat)}$ Collector Emitter Saturation Voltage		3.0		V	$V_{GE} = 15 \text{ V}, I_C = 10 \text{ A}$ $T_C = 25^\circ C$
$V_{CE(sat)}$ Collector Emitter Saturation Voltage		4.0	4.5	V	$V_{GE} = 15 \text{ V}, I_C = 10 \text{ A}$ $T_C = 125^\circ C$
Dynamic					
g_{fs} Forward Transductance	3.5			S	$V_{CE} = 20 \text{ V}, I_C = 10 \text{ A}$
C_{ies} Input Capacitance		1300		pF	$V_{GE} = 0$
C_{oes} Output Capacitance		100		pF	$V_{CE} = 25 \text{ V}$
C_{res} Reverse Transfer Capacitance		50		pF	$f = 1 \text{ MHz}$
Switching-Resistive Load					
$T_{d(on)}$ Turn-On Time		50		nS	$V_{CC} = 600 \text{ V}, I_C = 10 \text{ A}$
t_r Rise Time		200		nS	$V_{GE} = 15 \text{ V}, R_g = 3.3 \text{ } ,$
$T_{d(off)}$ Turn-Off Delay Time		200		nS	$T_J = 125^\circ C$
t_f Fall Time		300		nS	
Switching-Inductive Load					
$T_{d(off)}$ Turn-Off Delay Time		200		nS	$V_{CEclamp} = 600 \text{ V}, I_C = 10 \text{ A}$
t_f Fall Time		200		nS	$V_{GE} = 15 \text{ V}, R_g = 3.3$
E_{off} Turn-Off Losses		1.1		mWs	$L = 1 \text{ mH}, T_J = 125^\circ C$